Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	(COC or (gamma near2 carboxylated near2 osteocalcin)) same EDTA	US-PGPUB; USPAT; EPO; DERWENT	OR	ON	2005/03/28 16:35

FILE 'BIOTECHNO' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'CONFSCI' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'HEALSAFE' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'IMSDRUGCONF' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'LIFESCI' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'MEDICONF' ENTERED AT 16:51:54 ON 28 MAR 2005

FILE 'PASCAL' ENTERED AT 16:51:54 ON 28 MAR 2005

=> (COC or gamma carboxylated osteocalcin) and (calcium or EDTA)
L1 7 FILE AGRICOLA
L2 10 FILE BIOTECHNO
L3 0 FILE CONFSCI
L4 0 FILE HEALSAFE
L5 0 FILE IMSDRUGCONF
L6 5 FILE LIFESCI
L7 0 FILE MEDICONF
L8 13 FILE PASCAL

TOTAL FOR ALL FILES
L9 35 (COC OR GAMMA CARBOXYLATED OSTEOCALCIN) AND (CALCIUM OR EDTA)

=> l9 and osteoporosis
L10 0 FILE AGRICOLA
L11 0 FILE BIOTECHNO
L12 0 FILE CONFSCI
L13 0 FILE HEALSAFE
L14 0 FILE IMSDRUGCONF
L15 1 FILE LIFESCI
L16 0 FILE MEDICONF
L17 0 FILE PASCAL

TOTAL FOR ALL FILES
L18 1 L9 AND OSTEOPOROSIS

=> d l18 ibib abs total

L18 ANSWER 1 OF 1 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2001:58087 LIFESCI
TITLE: Prolonged intake of fermented soybean (natto) diets containing vitamin K2 (menaquinone-7) prevents bone loss in ovariectomized rats
AUTHOR: Yamaguchi, M.; Kakuda, H.; Gao, Y.H.; Tsukamoto, Y.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan
SOURCE: Journal of Bone and Mineral Metabolism [J. Bone Miner. Metab.], (20000210) vol. 18, no. 2, pp. 71-76. ISSN: 0914-8779.
DOCUMENT TYPE: Journal
FILE SEGMENT: T

LANGUAGE: English
SUMMARY LANGUAGE: English
AB The effect of the prolonged intake of dietary vitamin K2 (menaquinone-7, MK-7) on bone loss in ovariectomized (OVX) rats was investigated. OVX rats were freely given experimental diets containing the fermented soybean (natto; including 9.4 mu g MK-7 /100 g diet) without or with supplemental MK-7 (containing 14.1 or 18.8 mu g of MK-7 as total per 100 g diet) for 150 days. Feeding produced a significant elevation of MK-7 concentration in the serum of OVX rats. In this case, the femoral MK-4 content was significantly increased, but MK-7 was not detected in the femoral tissues, indicating degradation of MK-7. Serum **gamma** - **carboxylated osteocalcin** concentration was significantly decreased by OVX. This decrease was significantly prevented by the feeding of the natto diets with supplemental MK-7 (18.8 mu g/100 g diets). OVX caused a significant decrease in femoral dry weight, femoral **calcium** content, and mineral density. These decreases were significantly prevented by feeding with diets containing natto with MK-7 (total, 18.8 mu g/100 g diets). This study demonstrates that the prolonged intake of natto dietary including MK-7 has a preventive effect on bone loss induced by OVX. Dietary MK-7 may be useful in the prevention of **osteoporosis**.

=> 19 and (fragility or fragile or fracture)
L19 0 FILE AGRICOLA
L20 0 FILE BIOTECHNO
L21 0 FILE CONFSCI
L22 0 FILE HEALSAFE
L23 0 FILE IMSDRUGCONF
L24 0 FILE LIFESCI
L25 0 FILE MEDICONF
L26 0 FILE PASCAL

TOTAL FOR ALL FILES
L27 0 L9 AND (FRAGILITY OR FRAGILE OR FRACTURE)

=> d 19 ibib abs total

L9 ANSWER 1 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
ACCESSION NUMBER: 2004:49755 AGRICOLA
DOCUMENT NUMBER: IND43647742
TITLE: Interspecific variation of plant traits associated with resistance to herbivory among four species of Ficus (Moraceae).
AUTHOR(S): Xiang, H.; Chen, J.
AVAILABILITY: DNAL (450 An7)
SOURCE: Annals of botany, 2004 Sept. Vol. 94, no. 3 p. 377-384
ISSN: 0305-7364
NOTE: Includes references
DOCUMENT TYPE: Article
FILE SEGMENT: Non-US
LANGUAGE: English
AB Background and aims To understand the defensive characteristics of interspecies varieties and their responses to herbivory damage, four species of Ficus plants (Ficus altissima, F. auriculata, F. racemosa and F. hispida) were studied. They were similar in life form, but differed in successional stages. Of these, Ficus altissima is a late successional species, F. hispida is a typical pioneer and F. auriculata and F. racemosa are intermediate successional species. We addressed the following questions: (1) What is the difference in plant traits among the four species and are these traits associated with differences in herbivory damage levels? (2) What is the difference in the damage-induced changes among the four species? Methods Herbivory damage was measured in the field on randomly planted seedlings of the four species of the same age. Defences to herbivory were also tested by feeding leaves of the four

species to larvae of Asota caricae in the laboratory. A total of 14 characters such as water content, thickness, toughness, pubescence density on both sides, leaf expansion time, lifetime and the contents of total carbon (C), nitrogen (N), phosphorous (P), potassium (K), magnesium (Mg) and **calcium** (Ca) were measured. Leaf **calcium** oxalate crystal (**COC**) density, total Ca and N content, leaf toughness and height were measured to investigate induced responses to artificial herbivory among the four species. Key results and conclusions Herbivory damage in the four studied species varied greatly. The pioneer species, F. hispida, suffered the most severe herbivory damage, while the late successional species, F. altissima, showed the least damage. A combination of several characteristics such as high in content of N, Ca and P and low in leaf toughness, lifetime and C : N ratio were associated with increased herbivore damage. The late successional species, F. altissima, might also incorporate induced defence strategies by means of an increase in leaf **COC** and toughness.

L9 ANSWER 2 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 2003:42276 AGRICOLA
DOCUMENT NUMBER: IND23331041
TITLE: In vitro spontaneous parthenogenetic activation of golden hamster oocytes.
AUTHOR(S): Sun, X.S.; Yue, K.Z.; Zhou, J.B.; Chen, Q.X.; Tan, J.H.
AVAILABILITY: DNAL (QP251.A1T5)
SOURCE: Theriogenology, Jan 15, 2002. Vol. 57, No. 2. p. 845-851
Publisher: New York, N.Y. : Elsevier Science Inc.
CODEN: THGNBO; ISSN: 0093-691X
NOTE: Includes references
PUB. COUNTRY: New York (State); United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB Parthenogenetic activation is a major hurdle to be cleared for the examination of the human sperm chromosome after intracytoplasmic injection (ICSI) into golden hamster oocytes. Various factors that affect spontaneous activation of hamster oocytes were, therefore, investigated in this study. We collected cumulus-oocyte complexes (**COC**) from the oviducts of superovulated females and washed them thoroughly with Ca(2+)-containing or Ca(2+)-free TALP-HEPES medium (handling media). We cultured oocytes with intact cumulus or those without cumulus (removed by previous hyaluronidase treatment) in Ca(2+)-containing or -free m-TALP-3 for 6 or 12 h before examining for their activation. Among the oocytes recovered 17 h post-hCG, 92-94% were parthenogenetically activated by 6 h of in vitro culture. Activation rate in the oocytes collected at 13.5 h post-hCG (53%) was significantly ($P < 0.05$) lower than that in the oocytes collected 17 h post-hCG (92%), indicating that the spontaneous activation rate increased as the oocytes became older. Both cumulus-intact and cumulus-free oocytes had similar ($P > 0.05$) activation rates when cultured in vitro, suggesting that hyaluronidase treatment had no effect on the rate of oocyte activation. Omission of Ca(2+) from the handling medium also had no effect on the activation of the oocytes. The rate of spontaneous activation of the oocytes cultured in **calcium**-free medium for 6 (9%) and 12 h (16%) was significantly ($P < 0.01$) lower than that (94%) of the control oocytes cultured in Ca(2+)-containing medium, implying a positive influence of Ca(2+) on in vitro activation of hamster oocytes. When we cultured the oocytes first in **calcium**-free medium for 6 h, and then in **calcium**-containing medium for 6 h, 94% were activated, which is comparable to the rate for oocytes continuously cultured in Ca(2+)-containing medium. This indicates that the inhibition of hamster oocyte activation in Ca(2+)-free medium is reversible and can be used to control spontaneous activation of golden hamster oocytes.

L9 ANSWER 3 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 2002:45176 AGRICOLA
DOCUMENT NUMBER: IND23277450
TITLE: Effect of sperm cryopreservation and treatment with **calcium** ionophore or heparin on in vitro fertilization of horse oocytes.
AUTHOR(S): Alm, H.; Torner, H.; Blottner, S.; Nurnberg, G.; Kanitz, W.
AVAILABILITY: DNAL (QP251.A1T5)
SOURCE: Theriogenology, Sept 15, 2001. Vol. 56, No. 5. p. 817-829
Publisher: New York, N.Y. : Elsevier Science Inc.
CODEN: THGNBO; ISSN: 0093-691X
NOTE: Includes references
PUB. COUNTRY: New York (State); United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB Little information is available on methods of sperm capacitation for IVF in the horse. In this study, we summarized results of several independent trials that compared acrosome reaction, hyperactivation and chromatin integrity of fresh or cryopreserved stallion spermatozoa after treatment with heparin or with **calcium** ionophore. We also examined the influence of spermatozoa storage (fresh vs. cryopreserved), capacitation treatment, oocyte maturation time and cumulus morphology on the penetration rate and fertilization rate. We recovered cumulus-oocyte-complexes (**COCs**) from ovaries by ultrasound guided follicle aspiration or by scraping of follicles from ovaries obtained at a slaughterhouse. Upon recovery, we evaluated the cumulus morphology, and the **COCs** were matured in vitro for 18 to 24 or 26 to 40 h. Fresh semen and cryopreserved semen were treated either with heparin (200 microgram/mL) or **calcium** ionophore (7.14 micromolar). Overall, 28.4% (99/349) of the oocytes were penetrated, and 12.9% (45/349) were fertilized. Fresh spermatozoa treated with **calcium** ionophore showed a higher penetration rate than cryopreserved spermatozoa (36.0 vs. 0%). Fresh and heparin-treated spermatozoa showed a penetration rate of 29.1%, and the same treatment for cryopreserved spermatozoa showed a penetration rate of 33.7%; none of these differences was significant ($P>0.05$). Fertilization rates after the **calcium** and heparin treatment followed the same trend and also showed no significant differences. Prolonged maturation period resulted in higher penetration ($P<0.05$) and fertilization rates in compact (26 to 40 h: 37.7 and 13.1% vs. 18 to 24 h: 13.1 and 2.8%) and in tendency in expanded **COCs** (26 to 40 h: 40.0 and 30.3% vs. 18 to 24 h: 29.4 and 13.5%). In oocytes with only a few cumulus cells, the rates tended to be higher after the shorter incubation (18 to 24 h: 33.5 and 18.8% vs. 26 to 40 h: 17.2 and 6.5%). We observed hyperactivation more frequently in fresh than in cryopreserved semen after different treatments (43.2, 39.1 and 35.4% for heparin, **calcium** ionophore and control vs. 15.7, 10.8 and 5.7%, respectively). We observed significant changes in the acrosome reaction of fresh spermatozoa after heparin treatment (62.6 vs. 48.2%, $P<0.05$), as well as in cryopreserved spermatozoa after **calcium** ionophore treatment (31.7 vs. 17.6%, $P<0.05$). The chromatin integrity was significantly reduced after heparin treatment of fresh spermatozoa, in comparison to control and **calcium** ionophore (81.0 vs. 87.3 and 86.6, $P<0.02$). We also observed a similar reduction of chromatin quality after heparin treatment in cryopreserved spermatozoa, but the difference was significant only between heparin and **calcium** ionophore treatment [77.4 vs. 86.4 ($P<0.02$) and 84.9]. The results in the this retrospective study show that capacitating fresh spermatozoa with **calcium** ionophore, or using heparin in cryopreserved spermatozoa, results in higher penetration and fertilization rates of in vitro matured horse oocytes. A prolonged maturation time of 26 to 40 h is necessary for compact cumulus oocyte complexes to achieve the fertilization capacity. Further investigation is needed to show the developmental capacity of

these fertilized oocytes.

L9 ANSWER 4 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 2000:6011 AGRICOLA
DOCUMENT NUMBER: IND22017645
TITLE: Effects of prolactin on intracellular stored **calcium** in the course of bovine oocyte maturation in vitro.
AUTHOR(S): Kuzmina, T.I.; Lebedeva, I.Y.; Torner, H.; Alm, H.; Denisenko, V.Y.
CORPORATE SOURCE: All-Russian Research Institute for Farm Animal Genetics and Breeding, St. Petersburg.
AVAILABILITY: DNAL (QP251.A1T5)
SOURCE: Theriogenology, May 1999. Vol. 51, No. 7. p. 1363-1374
Publisher: New York, N.Y. : Elsevier Science Inc.
CODEN: THGNBO; ISSN: 0093-691X
NOTE: Includes references
PUB. COUNTRY: New York (State); United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB At present there are divergent opinions as to the role of prolactin (PRL) in the mechanisms of meiotic regulation in mammals. We investigated the effects of bovine PRL (bPRL) on bovine oocyte maturation in different culture systems and varying levels of intracellular stored **calcium** [Ca(2+)](is) in the oocytes. Cumulus-oocyte complexes (**COC**) were incubated in TCM 199 containing either 10% fetal calf serum (FCS) in the absence (System 1) or presence (System 2) of FSH and estradiol, or 6 mg/mL bovine serum albumin (BSA) in the presence of FSH and estradiol (System 3). Levels of [Ca(2+)](is) in oocytes were determined by using the fluorophore chlortetracycline. The addition of 50 ng/mL bPRL to different culture media increased the percentage of oocytes at telophase I and metaphase II stages (Systems 1 and 2) and/or decreased the percentage of oocytes with degenerated chromosomes (Systems 1 and 3). Compared with the control, lower levels of [Ca(2+)](is) were observed in oocytes cultured for 2.5 h in those systems in which bPRL decreased the rate of oocytes with degenerated chromosomes (1.27 +/- 0.11 vs 1.67 +/- 0.09 arbitrary units (AU) in System 1, $P < 0.001$ and 1.27 +/- 0.12 vs 1.52 +/- 0.04 AU in System 3, $P < 0.001$). These findings show that the effects of bPRL on bovine oocyte maturation depend on the composition of the culture system and that the decline in the rate of oocytes with with degenerated chromosomes in response to bPRL may be the result of the decrease in [Ca(2+)](is) levels at early stages of oocyte maturation.

L9 ANSWER 5 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 1998:36123 AGRICOLA
DOCUMENT NUMBER: IND20799590
TITLE: In vitro penetration of pig oocytes in a modified Tris-buffered medium: effect of BSA, caffeine and **calcium**.
AUTHOR(S): Abeydeera, L.R.; Day, B.N.
SOURCE: Theriogenology, Sept 1997. Vol. 48, No. 4. p. 537-544
Publisher: New York, N.Y. : Elsevier Science Inc.
CODEN: THGNBO; ISSN: 0093-691X
NOTE: Includes references
PUB. COUNTRY: New York (State); United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB The effect of BSA, caffeine and **calcium** was studied on the penetration of pig oocytes by frozen-thawed spermatozoa in a modified Tris-buffered medium (mTBM) without added bicarbonate. Pig cumulus-oocyte

complexes (**COC**) were cultured in BSA-free NCSU 23 medium containing porcine follicular fluid (10%), cysteine (0.1 mg/ml) arid hormonal supplements (eCG and hCG: 10 IU/ml each) for 22 h. The **COC** were then cultured in the same medium but without hormonal supplements for an additional 22 h. After culture, cumulus cells were removed and oocytes were co-incubated with spermatozoa for 6 h in mTBM containing caffeine (5 mM) and 0.1 or 0.4% BSA (Experiment 1). In Experiment 2, oocytes were inseminated in mTBM containing 0.1% BSA and various concentrations of caffeine (0 to 5 mM). In Experiment 3, insemination was carried out in mTBM containing 0.1% BSA, 1 mM caffeine and various concentrations of Ca2+ (0.5 to 10 mM). Supplementation of mTBM with either 0.1 or 0.4% BSA resulted a nigh penetration rate with a high polyspermy rate. However, the mean number of spermatozoa per oocyte was significantly higher at 0.4% than at 0.1% BSA. The penetration rate, polyspermy rate and mean number of spermatozoa per oocyte were all significantly higher when 1 to 5 mM caffeine were added to the medium than in caffeine-free medium. No penetration was observed in the presence of 0.5 mM Ca2+. The penetration rate was significantly increased from 12 to 92% at 2.5 to 10 mM Ca2+. The mean number of spermatozoa per oocyte did not differ between 2.5 and 5 mM Ca2+ but increased significantly at 7.5 and 10 mM. These results show the successful in vitro penetration of pig oocytes in a chemically semi-defined medium without added bicarbonate. Although BSA and caffeine can modulate the rate of sperm penetration, **calcium** seems to be an important regulatory ion.

L9 ANSWER 6 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 1998:26816 AGRICOLA
DOCUMENT NUMBER: IND20626962
TITLE: Nutrient distribution, dynamics, and sampling in coconut and Canary Island date palms.
AUTHOR(S): Broschat, T.K.
SOURCE: Journal of the American Society for Horticultural Science, Nov 1997. Vol. 122, No. 6. p. 884-890
Publisher: Alexandria, Va. :
ISSN: 0003-1062
NOTE: Includes references
PUB. COUNTRY: United States; Virginia
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB All leaves from 10 replicate Cocos nucifera L. 'Malayan Dwarf' (**COC**) and Phoenix canariensis Chabaud (CID) trees were sampled for leaf nutrient analysis. In addition, the leaflets of the youngest fully expanded leaves and the third oldest leaves were divided into five groups along the primary leaf axis and these leaflets were then cut into thirds to determine nutrient distribution patterns within leaves and leaflets. Nutrient remobilization rates were calculated for N, P, K, Mg, and Mn. Results showed that N, P, and K were highly mobile within and between leaves of both species of palms. Up to 31% of the N, 66% of the K, and 37% of the total P in the oldest leaves were ultimately remobilized to newer leaves within the palm. Magnesium remobilization rates averaged approximately 71% for CID but only approximately 10% for **COC**. The middle-aged leaves appeared to be the primary sink for Mg in **COC**, rather than the youngest leaves as in CID. Manganese was also quite mobile in both species, with up to 44% of the total Mn remobilized in CID. Samples consisting of recently matured leaves were determined to be the most appropriate for Ca, Fe, Mg (**COC** only), and Zn, but oldest leaves are more suitable for N, P, K, and Mn analysis.

L9 ANSWER 7 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

ACCESSION NUMBER: 96:40327 AGRICOLA
DOCUMENT NUMBER: IND20520311

TITLE: The efficacy of an enzymic cocktail and a fungal mycelium in dephosphorylating corn-soybean meal-based feeds fed to growing turkeys.
AUTHOR(S): Zyla, K.; Ledoux, D.R.; Kujawski, M.; Veum, T.L.
CORPORATE SOURCE: University of Agriculture, Krakow, Poland.
AVAILABILITY: DNAL (47.8 Am33P)
SOURCE: Poultry science, Mar 1996. Vol. 75, No. 3. p. 381-387
Publisher: Savoy, IL : Poultry Science Association, Inc.
CODEN: POSCAL; ISSN: 0032-5791
NOTE: Includes references
PUB. COUNTRY: Illinois; United States
DOCUMENT TYPE: Article
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension
LANGUAGE: English

AB A study was conducted to determine the efficacy of phytase, an enzymic cocktail, and a waste Aspergillus niger mycelium to hydrolyze phytate present in corn-soybean meal diets. One hundred turkey poults were assigned to dietary treatments for 2 wk (Days 7 to 21). Dietary treatments included: 1) NRC (1994) diet (NRC), with recommended concentration of 0.6% available P (aP) and 1.2% Ca; 2) Phytase diet (PHYT), 1,000 units phytase/kg diet, 0.16% aP, and 0.84% Ca; 3) cocktail diet (**COC**), 1,000 units of phytase/kg diet plus acid phosphatase (100 units/g of diet), acid protease (42 units/g of diet), pectinase (2.94%), 0.16% aP, and 0.84% Ca; 4) Fungal mycelium diet (MYC), 5% mycelium, 0.16% aP, and 0.84% Ca; and 5) a positive control diet (CTRL+), 0.42% aP, and 0.84% Ca. Turkeys fed the PHYT diet consumed less feed and gained less weight but retained more P than poults fed the CTRL+ or NRC diets. Poults fed the **COC** diet performed as well as poults fed CTRL+ or NRC diets but retained more P (77%) and Ca (68%). Poults fed the MYC diet retained 79% P, gained the most weight, and were more efficient than poults fed any other dietary treatment. In vitro P release from experimental diets correlated well (R = 0.906) with P retention as observed in the feeding trial. Compared with the diet containing phytase as the sole supplemental enzyme, both the enzymic cocktail and fungal mycelium enhanced performance, bone mineralization, and retention of P and Ca in growing turkeys.

L9 ANSWER 8 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2002:34975740 BIOTECHNO
TITLE: Effects of β-endorphin and naloxone on in vitro maturation of bovine oocytes
AUTHOR: Dell'Aquila M.E.; Casavola V.; Reshkin S.J.; Albrizio M.; Guerra L.; Maritato F.; Minola P.
CORPORATE SOURCE: Dr. M.E. Dell'Aquila, Department of Animal Production, Section of Reproduction, University of Bari, Str. Prov. Casamassima Km 30-70010, Valenzano-Bari, Italy. E-mail: e.dellaquila@veterinaria.uniba.it
SOURCE: Molecular Reproduction and Development, (2002), 63/2 (210-222), 63 reference(s)
CODEN: MREDEE ISSN: 1040-452X
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2002:34975740 BIOTECHNO

AB Bovine cumulus-oocyte complexes (**COCs**) and mural granulosa cells express the mRNA coding for the μ-opioid receptor. The addition of β-endorphin (β-end) to oocytes cultured in hormonally-supplemented in vitro maturation (IVM) medium had no effect on the rates of oocytes reaching the metaphase II (MII) stage, but significantly decreased the maturation rate (P<0.05) and arrested oocytes at metaphase I (MI) after culture in hormone-free medium (P<0.001). Naloxone (Nx) reverted this inhibitory effect of β-end. Moreover, Nx "per se" showed a dose-dependent dual effect. When added at high concentration (10.sup.-.sup.3 M), it significantly reduced the rate of oocytes in MII (P<0.001), thus increasing the rate of oocytes arrested in MI. However, Nx added at low concentration (10.sup.-.sup.8 M)

significantly increased oocyte maturation (P<0.001). High concentration of Nx induced an increase in both intracellular **calcium** concentration ([Ca.sup.2.sup.+].sub.i) and in the activity of the mitogen-activated protein kinase (MAPK) also called extracellular-regulated kinase (ERK) in cumulus cells of bovine **COCs**. Blocking the rise in [Ca.sup.2.sup.+].sub.i with the **calcium** chelator acetoxymethylester-derived form of bis (o-aminophenoxy) ethane-N,N,N',N'-tetraacetic acid (BAPTA-AM) reversed the Nx-dependent inhibition of meiotic maturation observed at high Nx concentrations. Whereas blocking ERK with the MAPK/ERK kinase (MEK) inhibitor, PD98059, had no effect on this process. Therefore, we concluded that the μ-opioid receptor, by inducing [Ca.sup.2.sup.+].sub.i increase, participates in the cumulus-oocyte coupled signaling associated with oocyte maturation. .COPYRGT. 2002 Wiley-Liss, Inc.

L9 ANSWER 9 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2002:34893669 BIOTECHNO
TITLE: Characterization of the coupling activity for the binding of inter-α-trypsin inhibitor to hyaluronan in human and bovine follicular fluid
AUTHOR: Odum L.; Yding Andersen C.; Jessen T.E.
CORPORATE SOURCE: L. Odum, Department of Clinical Biochemistry, Roskilde University Hospital, 7-13 Kogevej, DK-4000 Roskilde, Denmark.
E-mail: rslaod@ra.dk
SOURCE: Reproduction, (2002), 124/2 (249-257), 34 reference(s)
CODEN: RCUKBS ISSN: 1470-1626
DOCUMENT TYPE: Journal; Article
COUNTRY: United Kingdom
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2002:34893669 BIOTECHNO
AB The plasma proteinase inter-α-trypsin inhibitor is necessary for normal expansion of the cumulus-oocyte complex (**COC**) and lack of inter-α-trypsin inhibitor results in severe infertility. After diffusion from the circulation into the follicles, inter-α-trypsin inhibitor is incorporated into the extracellular hyaluronan network of the expanding **COC**. However, mixing isolated inter-α-trypsin inhibitor with hyaluronan in vitro does not result in coupling to hyaluronan. Other components must be present. A recently developed electrophoretic technique by which hyaluronan-bound inter-α-trypsin inhibitor is immobilized was used to demonstrate coupling activity in human and bovine follicular fluid that is necessary for the formation of a firm binding between inter-α-trypsin inhibitor heavy chains and hyaluronan, as observed in vivo. No coupling activity could be detected in human serum. Coupling occurred only in the presence of follicular fluid. The coupling activity of follicular fluid was irreversibly destroyed by heat treatment, lowering of pH or tryptic digestion, indicating that the coupling activity is associated with a protein. **Calcium** ions are essential for the coupling reaction. The binding reaction in vitro using intact inter-α-trypsin inhibitor is slow and occurs over 24 h. The early-formed complexes between inter-α-trypsin inhibitor and hyaluronan contain small amounts of bikunin, whereas the end product contains heavy chains and essentially no bikunin. The heavy chains released from inter-α-trypsin inhibitor by NaOH treatment bound immediately to hyaluronan, indicating that the dissociation of heavy chains from inter-α-trypsin inhibitor is the rate-limiting step. In conclusion, at least four components are essential for the covalent binding of heavy chains to hyaluronan: inter-α-trypsin inhibitor and **calcium** from plasma, hyaluronan and one or more proteins found in follicular fluid.

L9 ANSWER 10 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2002:34303359 BIOTECHNO
TITLE: In vitro spontaneous parthenogenetic activation of golden hamster oocytes
AUTHOR: Sun X.S.; Yue K.Z.; Zhou J.B.; Chen Q.X.; Tan J.H.

CORPORATE SOURCE: J.H. Tan, Lab. for Animal Reproduction, Coll. of Anim. Sci./Vet. Medicine, Shandong Agricultural University, Taian City, Shandong Province 271018, China.
E-mail: tanjh@sdau.edu.cn
SOURCE: Theriogenology, (2002), 57/2 (845-851), 25 reference(s)
CODEN: THGNBO ISSN: 0093-691X
PUBLISHER ITEM IDENT.: S0093691X0100680X
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2002:34303359 BIOTECHNO
AB Parthenogenetic activation is a major hurdle to be cleared for the examination of the human sperm chromosome after intracytoplasmic injection (ICSI) into golden hamster oocytes. Various factors that affect spontaneous activation of hamster oocytes were, therefore, investigated in this study. We collected cumulus-oocyte complexes (**COC**) from the oviducts of superovulated females and washed them thoroughly with Ca.sup.2.sup.+-containing or Ca.sup.2.sup.+-free TALP-HEPES medium (handling media). We cultured oocytes with intact cumulus or those without cumulus (removed by previous hyaluronidase treatment) in Ca.sup.2.sup.+-containing or -free m-TALP-3 for 6 or 12 h before examining for their activation. Among the oocytes recovered 17 h post-hCG, 92-94% were parthenogenetically activated by 6 h of in vitro culture. Activation rate in the oocytes collected at 13.5 h post-hCG (53%) was significantly ($P < 0.05$) lower than that in the oocytes collected 17 h post-hCG (92%), indicating that the spontaneous activation rate increased as the oocytes became older. Both cumulus-intact and cumulus-free oocytes had similar ($P > 0.05$) activation rates when cultured in vitro, suggesting that hyaluronidase treatment had no effect on the rate of oocyte activation. Omission of Ca.sup.2.sup.+ from the handling medium also had no effect on the activation of the oocytes. The rate of spontaneous activation of the oocytes cultured in **calcium**-free medium for 6 (9%) and 12 h (16%) was significantly ($P < 0.01$) lower than that (94%) of the control oocytes cultured in Ca.sup.2.sup.+-containing medium, implying a positive influence of Ca.sup.2.sup.+ on in vitro activation of hamster oocytes. When we cultured the oocytes first in **calcium**-free medium for 6 h, and then in **calcium**-containing medium for 6 h, 94% were activated, which is comparable to the rate for oocytes continuously cultured in Ca.sup.2.sup.+-containing medium. This indicates that the inhibition of hamster oocyte activation in Ca.sup.2.sup.+-free medium is reversible and can be used to control spontaneous activation of golden hamster oocytes.

L9 ANSWER 11 OF 35 BIOTECHNO
ACCESSION NUMBER: 2002:34193943 BIOTECHNO
TITLE: Developmental potential in bovine oocytes is related to cumulus-oocyte complex grade, **calcium** current activity, and **calcium** stores
AUTHOR: Boni R.; Cuomo A.; Tosti E.
CORPORATE SOURCE: R. Boni, Dipto. Sci. delle Produzioni Anim., Universita della Basilicata, Via Nazario Sauro, 85 85100 Potenza, Italy.
E-mail: boni@unibas.it
SOURCE: Biology of Reproduction, (2002), 66/3 (836-842), 42 reference(s)
CODEN: BIREBV ISSN: 0006-3363
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2002:34193943 BIOTECHNO
AB A morphological classification of the immature cumulus-oocyte complex (**COC**), which grossly resembled the atresia grade of its follicle source, was used in bovine oocytes to determine 1) the developmental potential by either in vitro fertilization or parthenogenetic activation,

2) the **calcium** current activity by whole-cell voltage clamp technique, and 3) the intracytoplasmic **calcium** stores by microfluorimetric evaluation. The **COC** classification took into account some cumulus and ooplasm features, designated as follows: A) presence of a clear and compact cumulus and translucent ooplasm, B) dark and compact cumulus and dark ooplasm, and C) dark and expanded cumulus and dark ooplasm. We found no difference between in vitro fertilization and parthenogenetically activated oocytes in terms of cleavage rate and blastocyst production. Both protocols indicated a significant variability between the three compared **COC** categories. The B-**COCs** showed the highest embryo production efficiency as well as the greatest Ca.sup.2.sup.+ current activity, whereas A-**COCs** showed an opposite pattern. The C-**COCs**, mostly attributed to atretic and heavily atretic follicles, showed morphological characteristics between those of A- and B-**COCs**. Stores of Ca.sup.2.sup.+ were significantly greater in A-**COCs** than in B- and C-**COCs** in the case of immature oocytes, and greater in B-**COCs** than in C-and A-**COCs** in the case of in vitro-matured oocytes. These results demonstrate that in the bovine 1) the considered morphological criteria for oocyte classification are related to developmental competence, 2) plasma membrane Ca.sup.2.sup.+ current in the immature oocyte is related to developmental potential, and 3) **calcium** stores are related to morphological quality in immature oocytes and to developmental competence in mature oocytes.

L9 ANSWER 12 OF 35 BIOTECHNO
ACCESSION NUMBER: 2001:32983332 BIOTECHNO
TITLE: Effect of sperm cryopreservation and treatment with **calcium** ionophore or heparin on in vitro fertilization of horse oocytes
AUTHOR: Alm H.; Torner H.; Blottner S.; Nurnberg G.; Kanitz W.
CORPORATE SOURCE: H. Alm, Department of Reproductive Biology, Res. Inst. for Bio. of Farm Animals, 18196 Dummerstorf, Germany. E-mail: alm@fbn-dummerstorf.de
SOURCE: Theriogenology, (15 SEP 2001), 56/5 (817-829), 58 reference(s)
CODEN: THGNBO ISSN: 0093-691X
PUBLISHER ITEM IDENT.: S0093691X01006100
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2001:32983332 BIOTECHNO
AB Little information is available on methods of sperm capacitation for IVF in the horse. In this study, we summarized results of several independent trials that compared acrosome reaction, hyperactivation and chromatin integrity of fresh or cryopreserved stallion spermatozoa after treatment with heparin or with **calcium** ionophore. We also examined the influence of spermatozoa storage (fresh vs. cryopreserved), capacitation treatment, oocyte maturation time and cumulus morphology on the penetration rate and fertilization rate. We recovered cumulus-oocyte-complexes (**COCs**) from ovaries by ultrasound guided follicle aspiration or by scraping of follicles from ovaries obtained at a slaughterhouse. Upon recovery, we evaluated the cumulus morphology, and the **COCs** were matured in vitro for 18 to 24 or 26 to 40 h. Fresh semen and cryopreserved semen were treated either with heparin (200 μg/mL) or **calcium** ionophore (7.14 μM). Overall, 28.4% (99/349) of the oocytes were penetrated, and 12.9% (45/349) were fertilized. Fresh spermatozoa treated with **calcium** ionophore showed a higher penetration rate than cryopreserved spermatozoa (36.0 vs. 0%). Fresh and heparin-treated spermatozoa showed a penetration rate of 29.1%, and the same treatment for cryopreserved spermatozoa showed a penetration rate of 33.7%; none of these differences was significant ($P > 0.05$). Fertilization rates after the **calcium** and heparin treatment followed the same trend and also showed no significant differences. Prolonged maturation period resulted in higher penetration ($P < 0.05$) and fertilization rates in compact (26 to 40 h: 37.7 and 13.1% vs. 18 to 24 h: 13.1 and 2.8%) and in tendency in expanded

COCs (26 to 40 h: 40.0 and 30.3% vs. 18 to 24 h: 29.4 and 13.5%). In oocytes with only a few cumulus cells, the rates tended to be higher after the shorter incubation (18 to 24 h: 33.5 and 18.8% vs. 26 to 40 h: 17.2 and 6.5%). We observed hyperactivation more frequently in fresh than in cryopreserved semen after different treatments (43.2, 39.1 and 35.4% for heparin, **calcium** ionophore and control vs. 15.7, 10.8 and 5.7%, respectively). We observed significant changes in the acrosome reaction of fresh spermatozoa after heparin treatment (62.6 vs. 48.2%, P < 0.05), as well as in cryopreserved spermatozoa after **calcium** ionophore treatment (31.7 vs. 17.6%, P < 0.05). The chromatin integrity was significantly reduced after heparin treatment of fresh spermatozoa, in comparison to control and **calcium** ionophore (81.0 vs. 87.3 and 86.6, P < 0.02). We also observed a similar reduction of chromatin quality after heparin treatment in cryopreserved spermatozoa, but the difference was significant only between heparin and **calcium** ionophore treatment [77.4 vs. 86.4 (P < 0.02) and 84.9]. The results in the this retrospective study show that capacitating fresh spermatozoa with **calcium** ionophore, or using heparin in cryopreserved spermatozoa, results in higher penetration and fertilization rates of in vitro matured horse oocytes. A prolonged maturation time of 26 to 40 h is necessary for compact cumulus oocyte complexes to achieve the fertilization capacity. Further investigation is needed to show the developmental capacity of these fertilized oocytes. .COPYRGT. 2001 by Elsevier Science Inc.

L9 ANSWER 13 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1999:29302500 BIOTECHNO
TITLE: Effects of prolactin on intracellular stored **calcium** in the course of bovine oocyte maturation in vitro
AUTHOR: Kuzmina T.I.; Lebedeva I.Y.; Torner H.; Alm H.; Denisenko V.Y.
CORPORATE SOURCE: T.I. Kuzmina, Department of Genetics/Biotechnology, All-Russian Research Institute, Farm Animal Genetics and Breeding, St. Petersburg-Pushkin 189620, Russian Federation.
SOURCE: Theriogenology, (1999), 51/7 (1363-1374), 39 reference(s)
CODEN: THGNBO ISSN: 0093-691X
PUBLISHER ITEM IDENT.: S0093691X99000801
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1999:29302500 BIOTECHNO
AB At present there are divergent opinions as to the role of prolactin (PRL) in the mechanisms of meiotic regulation in mammals. We investigated the effects of bovine PRL (bPRL) on bovine oocyte maturation in different culture systems and varying levels of intracellular stored **calcium** (¢Ca.sup.2.sup.+!(is)) in the oocytes. Cumulus-oocyte complexes (**COC**) were incubated in TCM 199 containing either 10% fetal calf serum (FCS) in the absence (System 1) or presence (System 2) of FSH and estradiol, or 6 mg/mL bovine serum albumin (BSA) in the presence of FSH and estradiol (System 3). Levels of ¢Ca.sup.2.sup.+!(is) in oocytes were determined by using the fluorophore chlortetracycline. The addition of 50 ng/mL bPRL to different culture media increased the percentage of oocytes at telophase I and metaphase II stages (Systems 1 and 2) and/or decreased the percentage of oocytes with degenerated chromosomes (Systems 1 and 3). Compared with the control, lower levels of ¢Ca.sup.2.sup.+!(is) were observed in oocytes cultured for 2.5 h in those systems in which bPRL decreased the rate of oocytes with degenerated chromosomes (1.27 ± 0.11 vs 1.67 ± 0.09 arbitrary units (AU) in System 1, P < 0.001 and 1.27 ± 0.12 vs 1.52 ± 0.04 AU in System 3, P< 0.001). These findings show that the effects of bPRL on bovine oocyte maturation depend on the composition of the culture system and that the decline in the rate of oocytes with degenerated chromosomes in response to bPRL may be the result of the decrease in ¢Ca.sup.2.sup.+!(is) levels at early stages of oocyte

maturation.

L9 ANSWER 14 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1999:29214787 BIOTECHNO
TITLE: Stage-dependent effects of epidermal growth factor on Ca.sup.2.sup.+ efflux in mouse oocytes
AUTHOR: Hill J.L.; Hammar K.; Smith P.J.S.; Gross D.J.
CORPORATE SOURCE: Dr. D.J. Gross, Dept. of Biochemistry/Molec. Biol., Lederle Graduate Research Center, University of Massachusetts, Amherst, MA 01003, United States.
E-mail: dgross@harpoon.biochem.umass.edu
SOURCE: Molecular Reproduction and Development, (1999), 53/2 (244-253), 46 reference(s)
CODEN: MREDEE ISSN: 1040-452X
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1999:29214787 BIOTECHNO
AB Epidermal growth factor (EGF) has received much attention recently for its positive effects on mammalian oocyte maturation and embryo development and its potential importance in cytoplasmic maturation of oocytes. **Calcium** (Ca.sup.2.sup.+) homeostasis in germinal vesicle stage oocytes has also been suggested to play a role in cytoplasmic maturation. This study examined the effects of EGF on Ca.sup.2.sup.+ mobilization as measured by its efflux from mouse oocytes at three time periods throughout maturation (0-4 hr, 4-8 hr, and 12 hr). Immature cumulus oocyte complexes (**COCs**) removed from the ovary for less than 4 hr exhibit oscillations in Ca.sup.2.sup.+ efflux that initiated 5-30 min following EGF stimulation. This response was not observed in **COCs** matured for 4-8 hr or 12 hr or in unstimulated 0-4 hr **COCs**. Denuded oocytes and cumulus cells did not show the same response to EGF (8.2 nM and 16.4 nM). Immunohistochemistry for detection of the EGF receptor along with EGF internalization studies showed that receptors are present both on cumulus cells and the oocyte but EGF appears to be internalized mainly by the cumulus cells. These data demonstrate that EGF induces oscillations in Ca.sup.2.sup.+ efflux in **COCs** 0-4 hr old and this response is mediated by the cumulus cells.

L9 ANSWER 15 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1998:28506674 BIOTECHNO
TITLE: Inhibition of phosphoinositide metabolism or chelation of intracellular **calcium** blocks FSH-induced but not spontaneous meiotic resumption in mouse oocytes
AUTHOR: Coticchio G.; Fleming S.
CORPORATE SOURCE: G. Coticchio, Tecnobios, Centre for Reproductive Health, Via del Borgo S. Pietro 136, 40126 Bologna, Italy.
E-mail: coticchio@tecnobios.it
SOURCE: Developmental Biology, (01 NOV 1998), 203/1 (201-209), 42 reference(s)
CODEN: DEBIAO ISSN: 0012-1606
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1998:28506674 BIOTECHNO
AB Mammalian oocytes are arrested at the diplotene phase of the first meiotic division until ovulation. In the mouse, germinal vesicle breakdown (GVBD) and progression to metaphase II is thought to be triggered by a positive signal originating in the follicular cells following stimulation by the luteinizing hormone (LH) surge. Isolated, fully grown oocytes can also undergo spontaneous reinitiation of meiosis in vitro in the absence of gonadotrophin stimulation. To investigate the mechanism of meiotic resumption, inhibitors of phosphoinositide metabolism and an intracellular **calcium** chelator were used

during maturation in vitro under different conditions. In a series of experiments, isolated cumulus cell-oocyte complexes (**COCs**) maintained in meiotic arrest by hypoxanthine were induced to resume meiosis by treatment with follicle-stimulating hormone (FSH). Under these conditions, both LiCl and neomycin, which inhibit phosphoinositide hydrolysis, produced a dose-dependent inhibitory effect on meiotic resumption. Similar results were obtained when FSH-induced meiotic resumption was observed in the presence of the acetoxymethyl ester form of 1,2-bis(o- aminophenoxy)ethane-N,N,N',N'-tetraacetic acid (BAPTA/AM), an intracellular **calcium** chelator. In hypoxanthine-arrested oocytes, GVBD induced by epidermal growth factor (EGF), which mimics FSH action in in vitro maturation, was also repressed by LiCl and neomycin. Conversely, meiotic resumption triggered by a pulse of 8-bromo-cyclic adenosine monophosphate (8-Br cAMP) was not affected by these two inhibitors. In experiments in which oocytes were cultured under conditions which permit spontaneous meiotic maturation, resumption of meiosis was not affected by either inhibition of phosphoinositide hydrolysis or chelation of intracellular **calcium**. Therefore, it appears that meiotic resumption induced by hormone stimulation requires activation of the phosphoinositide pathway and mobilization of intracellular **calcium**. In contrast, spontaneous maturation probably occurs through a different mechanism because it is not affected by inhibition of this signaling pathway.

L9 ANSWER 16 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1998:28268476 BIOTECHNO
TITLE: **Calcium** elevation in sheep cumulus-oocyte complexes after luteinising hormone stimulation
AUTHOR: Mattioli M.; Gioia L.; Barboni B.
CORPORATE SOURCE: Prof. M. Mattioli, Istituto di Fisiologia Veterinaria, Facolta di Medicina Veterinaria, Localita Piano D'Accio, 64020 Nepezzano (TE), Italy.
SOURCE: Molecular Reproduction and Development, (1998), 50/3 (361-369), 27 reference(s)
CODEN: MREDEE ISSN: 1040-452X
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1998:28268476 BIOTECHNO
AB We investigated Ca.sup.2.sup.+ levels in intact cumulus-oocyte complexes (**COCs**) on exposure to peak levels of luteinising hormone (LH). Specific preparations were used where cumulus corona cells were loaded with a membrane-permeant Ca.sup.2.sup.+-sensitive dye (FLUO-3AM), whereas the oocyte was injected directly with the nonpermeant form of the dye (FLUO-3). After exposure to LH, cumulus and corona radiata cells showed distinct rises in intracellular Ca.sup.2.sup.+ in 50- 200 sec. The pattern of Ca.sup.2.sup.+ response varied in the different cells both for the duration of the transients and for their persistence. Interestingly, Ca.sup.2.sup.+ elevations were recorded in all the layers of the cumulus mass, including the innermost layer of corona cells, demonstrating the wide diffusion of LH receptors. Following the Ca.sup.2.sup.+ raise in somatic cells, an intracellular Ca.sup.2.sup.+ elevation also was recorded within the oocyte with a delay of 100-300 sec. The elevation started at the cortex of the oocyte and then spread all over the ooplasm. The addition of verapamil or manganese chloride did not prevent LH-induced Ca.sup.2.sup.+ elevation in the **COC**, whereas mechanical uncoupling of cumulus cells from the oocyte prevented any Ca.sup.2.sup.+ response within the oocyte. The results indicate that cumulus-corona cells are capable of transducing LH message by rising intracellular Ca.sup.2.sup.+ and show that this signal is rapidly transferred into the oocyte through gap junctions. This may result from the direct diffusion of Ca.sup.2.sup.+ or its putative releaser IP3 from cumulus cells to the oocyte.

L9 ANSWER 17 OF 35 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 1997:28135462 BIOTECHNO
TITLE: In vitro penetration of pig oocytes in a modified

Tris-buffered medium: Effect of BSA, caffeine and **calcium**
AUTHOR: Abeydeera L.R.; Day B.N.
CORPORATE SOURCE: L.R. Abeydeera, Department of Animal Sciences, University of Missouri-Columbia, Columbia, MO 65211, United States.
SOURCE: Theriogenology, (1997), 48/4 (537-544), 31 reference(s)
CODEN: THGNBO ISSN: 0093-691X
PUBLISHER ITEM IDENT.: S0093691X97002707
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1997:28135462 BIOTECHNO
AB The effect of BSA, caffeine and **calcium** was studied on the penetration of pig oocytes by frozen-thawed spermatozoa in a modified Tris-buffered medium (mTBM) without added bicarbonate. Pig cumulus-oocyte complexes (**COC**) were cultured in BSA-free NCSU 23 medium containing porcine follicular fluid (10%), cysteine (0.1 mg/ml) and hormonal supplements (eCG and hCG: 10 IU/ml each) for 22 h. The **COC** were then cultured in the same medium but without hormonal supplements for an additional 22 h. After culture, cumulus cells were removed and oocytes were coincubated with spermatozoa for 6 h in mTBM containing caffeine (5 mM) and 0.1 or 0.4% BSA (Experiment 1). In Experiment 2, oocytes were inseminated in mTBM containing 0.1% BSA and various concentrations of caffeine (0 to 5 mM). In Experiment 3, insemination was carried out in mTBM containing 0.1% BSA, 1 mM caffeine and various concentrations of Ca.sup.2.sup.+ (0.5 to 10 mM). Supplementation of mTBM with either 0.1 or 0.4% BSA resulted a high penetration rate with a high polyspermy rate. However, the mean number of spermatozoa per oocyte was significantly higher at 0.4% than at 0.1% BSA. The penetration rate, polyspermy rate and mean number of spermatozoa per oocyte were all significantly higher when 1 to 5 mM caffeine were added to the medium than in caffeine-free medium. No penetration was observed in the presence of 0.5 mM Ca.sup.2.sup.+. The penetration rate was significantly increased from 12 to 92% at 2.5 to 10 mM Ca.sup.2.sup.+. The mean number of spermatozoa per oocyte did not differ between 2.5 and 5 mM Ca.sup.2.sup.+ but increased significantly at 7.5 and 10 mM. These results show the successful in vitro penetration of pig oocytes in a chemically semi-defined medium without added bicarbonate. Although BSA and caffeine can modulate the rate of sperm penetration, **calcium** seems to be an important regulatory ion.

L9 ANSWER 18 OF 35 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2005:8783 LIFESCI
TITLE: The Effect of Amiodarone in Mice with Acute Cocaine Toxicity
AUTHOR: DeWitt, C.; Heard, K.; Cleveland, N.J.; Dart, R.C.
CORPORATE SOURCE: Rocky Mountain Poison Center, Denver, CO, USA
SOURCE: Journal of Toxicology: Clinical Toxicology [J. Toxicol.: Clin. Toxicol.], (20040800) vol. 42, no. 5, p. 740. Meeting Info.: 2004 North American Congress of Clinical Toxicology Annual Meeting. Seattle, Washington (USA). 9-14 Sep 2004.
ISSN: 0731-3810.
DOCUMENT TYPE: Journal
TREATMENT CODE: Conference
FILE SEGMENT: X
LANGUAGE: English
AB Amiodarone (AM) blocks K super(+) and Ca super(2+) channels, possesses type Ib antidysrhythmic, sympatholytic, and myocardial depressant effects, and is first-line ALCS antidysrhythmic therapy for ventricular dysrhythmias. **COC** has "Quinidine-like" effects, and increases sympathetic drive and circulating catecholamines. Thus, amiodarone may be beneficial in the setting of **COC** toxicity, but remains unstudied. The aim of this study was to evaluate the effect of AM on mortality and seizure incidence in acute **COC** toxicity with the

hypothesis that AM will increase survival, but not affect seizure incidence.

L9 ANSWER 19 OF 35 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2004:104822 LIFESCI
TITLE: Interspecific Variation of Plant Traits Associated with Resistance to Herbivory Among Four Species of Ficus (Moraceae)
AUTHOR: Xiang, Hui; Chen, Jin
CORPORATE SOURCE: Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, Mengla, Yunnan Province, P. R. China 666303
SOURCE: Annals of Botany [Ann. Bot.], (20040900) vol. 94, no. 3, pp. 377-384.
ISSN: 0305-7364.
DOCUMENT TYPE: Journal
FILE SEGMENT: D
LANGUAGE: English
SUMMARY LANGUAGE: English
AB BACKGROUND AND AIMS: To understand the defensive characteristics of interspecies varieties and their responses to herbivory damage, four species of Ficus plants (Ficus altissima, F. auriculata, F. racemosa and F. hispida) were studied. They were similar in life form, but differed in successional stages. Of these, Ficus altissima is a late successional species, F. hispida is a typical pioneer and F. auriculata and F. racemosa are intermediate successional species. We addressed the following questions: (1) What is the difference in plant traits among the four species and are these traits associated with differences in herbivory damage levels? (2) What is the difference in the damage-induced changes among the four species? METHODS: Herbivory damage was measured in the field on randomly planted seedlings of the four species of the same age. Defences to herbivory were also tested by feeding leaves of the four species to larvae of Asota caricae in the laboratory. A total of 14 characters such as water content, thickness, toughness, pubescence density on both sides, leaf expansion time, lifetime and the contents of total carbon (C), nitrogen (N), phosphorous (P), potassium (K), magnesium (Mg) and **calcium** (Ca) were measured. Leaf **calcium** oxalate crystal (**COC**) density, total Ca and N content, leaf toughness and height were measured to investigate induced responses to artificial herbivory among the four species. Key results and conclusions Herbivory damage in the four studied species varied greatly. The pioneer species, F. hispida, suffered the most severe herbivory damage, while the late successional species, F. altissima, showed the least damage. A combination of several characteristics such as high in content of N, Ca and P and low in leaf toughness, lifetime and C : N ratio were associated with increased herbivore damage. The late successional species, F. altissima, might also incorporate induced defence strategies by means of an increase in leaf **COC** and toughness.

L9 ANSWER 20 OF 35 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2002:50776 LIFESCI
TITLE: Prolonged Intake of Isoflavone- and Saponin-Containing Soybean Extract (Nijiru) Supplement Enhances Circulating **gamma -Carboxylated Osteocalcin** Concentrations in Healthy Individuals
AUTHOR: Yamaguchi, M.; Ono, R.; Ma, Z.J.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan; E-mail: yamaguch@u-shizuoka-ken.ac.jp
SOURCE: Alternatives, (20010000) vol. 27, no. 1, pp. 579-582.
ISSN: 1205-7398.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The effect of nijiru, which is a by-product of the processing of soybeans to make the fermented soybeans called natto, on circulating blood chemistry levels related to **calcium** and bone metabolism in

healthy individuals was investigated. Twelve volunteers (six men and six women) were received nijiru twice a day for 60 days at a dose of 1500 mg (6 tablets) per day. The serum **gamma -carboxylated osteocalcin** concentration was significantly increased by the intake of nijiru in both men and women to about 2-fold that in the control group. The serum **calcium** concentration was significantly decreased by nijiru supplementation in women, and the serum inorganic phosphorus concentration was significantly reduced in both men and women. However, the intake of nijiru did not have a significant effect on serum glucose, nitrogen urea, albumin, free cholesterol, triglyceride, high-density lipoprotein cholesterol, and gamma -glutamyltranspeptidase concentrations in men or women, indicating that liver and renal function is not affected by nijiru supplementation. The results of the present study suggest that the intake of isoflavone- and saponin-containing nijiru can stimulate the gamma -carboxylation of osteocalsin, which plays an important role in bone formation and mineralization, in healthy individuals.

L9 ANSWER 21 OF 35 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2001:58087 LIFESCI
TITLE: Prolonged intake of fermented soybean (natto) diets containing vitamin K2 (menaquinone-7) prevents bone loss in ovariectomized rats
AUTHOR: Yamaguchi, M.; Kakuda, H.; Gao, Y.H.; Tsukamoto, Y.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan
SOURCE: Journal of Bone and Mineral Metabolism [J. Bone Miner. Metab.], (20000210) vol. 18, no. 2, pp. 71-76. ISSN: 0914-8779.
DOCUMENT TYPE: Journal
FILE SEGMENT: T
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The effect of the prolonged intake of dietary vitamin K2 (menaquinone-7, MK-7) on bone loss in ovariectomized (OVX) rats was investigated. OVX rats were freely given experimental diets containing the fermented soybean (natto; including 9.4 mu g MK-7 /100 g diet) without or with supplemental MK-7 (containing 14.1 or 18.8 mu g of MK-7 as total per 100 g diet) for 150 days. Feeding produced a significant elevation of MK-7 concentration in the serum of OVX rats. In this case, the femoral MK-4 content was significantly increased, but MK-7 was not detected in the femoral tissues, indicating degradation of MK-7. Serum **gamma -carboxylated osteocalcin** concentration was significantly decreased by OVX. This decrease was significantly prevented by the feeding of the natto diets with supplemental MK-7 (18.8 mu g/100 g diets). OVX caused a significant decrease in femoral dry weight, femoral **calcium** content, and mineral density. These decreases were significantly prevented by feeding with diets containing natto with MK-7 (total, 18.8 mu g/100 g diets). This study demonstrates that the prolonged intake of natto dietary including MK-7 has a preventive effect on bone loss induced by OVX. Dietary MK-7 may be useful in the prevention of osteoporosis.

L9 ANSWER 22 OF 35 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 1998:80494 LIFESCI
TITLE: **Calcium** elevation in sheep cumulus-oocyte complexes after luteinising hormone stimulation
AUTHOR: Mattioli, M.; Gioia, L.; Barboni, B.
CORPORATE SOURCE: Istituto di Fisiologia Veterinaria, Facolta di Medicina Veterinaria, Localita Piano D'Accio, 64020 Nepezzano (TE), Italy
SOURCE: Mol. Reprod. Dev., (19980700) vol. 50, no. 3, pp. 361-369. ISSN: 1040-452X.
DOCUMENT TYPE: Journal
FILE SEGMENT: T
LANGUAGE: English
SUMMARY LANGUAGE: English

AB We investigated Ca super(2+) levels in intact cumulus-oocyte complexes (**COCs**) on exposure to peak levels of luteinising hormone (LH). Specific preparations were used where cumulus corona cells were loaded with a membrane-permeant Ca super(2+)-sensitive dye (FLUO-3AM), whereas the oocyte was injected directly with the nonpermeant form of the dye (FLUO-3). After exposure to LH, cumulus and corona radiata cells showed distinct rises in intracellular Ca super(2+) in 50-200 sec. The pattern of Ca super(2+) response varied in the different cells both for the duration of the transients and for their persistence. Interestingly, Ca super(2+) elevations were recorded in all the layers of the cumulus mass, including the innermost layer of corona cells, demonstrating the wide diffusion of LH receptors. Following the Ca super(2+) raise in somatic cells, an intracellular Ca super(2+) elevation also was recorded within the oocyte with a delay of 100-300 sec. The elevation started at the cortex of the oocyte and then spread all over the ooplasm. The addition of verapamil or manganese chloride did not prevent LH-induced Ca super(2+) elevation in the **COC**, whereas mechanical uncoupling of cumulus cells from the oocyte prevented any Ca super(2+) response within the oocyte. The results indicate that cumulus-corona cells are capable of transducing LH message by rising intracellular Ca super(2+) and show that this signal is rapidly transferred into the oocyte through gap junctions. This may result from the direct diffusion of Ca super(2+) or its putative releaser IP3 from cumulus cells to the oocyte.

L9 ANSWER 23 OF 35 PASCAL
on STN

ACCESSION NUMBER: 2004-0570519 PASCAL

TITLE (IN ENGLISH): Bone metabolism in galactosemia
AUTHOR: PANIS B.; FORGET P. Ph.; VAN KROONENBURGH M. J. P. G.; VELMEER C.; MENHEERE P. P.; NIEMAN F. H.; RUBIO-GOZALBO M. E.
CORPORATE SOURCE: Department of Pediatrics, Metabolic Diseases, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Nuclear Medicine, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Biochemistry University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Clinical Biochemistry, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Clinical Epidemiology and Technology Assessment (KEMTA), University Hospital Maastricht, 6202 AZ Maastricht, Netherlands
SOURCE: Bone : (New York, NY), (2004), 35(4), 982-987, 44 refs.
ISSN: 8756-3282
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-19041, 354000122369650190
AN 2004-0570519 PASCAL

AB Classical galactosemia is an autosomal recessively inherited disorder of galactose metabolism. Treatment consists of life-long dietary restriction of galactose. Despite treatment, long-term complications occur such as a decreased bone mineral density (BMD). A decreased BMD might be the result of either dietary deficiencies secondary to the galactose-restricted diet or unknown intrinsic factors. In this study, 40 children with classical galactosemia (13 males and 27 females, aged 3-17 years) on dietary treatment were included to gain insight in the bone metabolism of galactosemics. We found weight and height Z scores significantly decreased in galactosemics. Mean areal BMD Z scores of lumbar spine and of femoral neck as measured by Dual energy X-ray Absorptiometry (DXA) were -0.6 (P < 001) and -0.3 (P = 0.066), respectively. Mean volumetric BMD of the femoral neck was significant lower in galactosemics (P < 0.001). The recommended dietary allowances (RDA) for **calcium**,

magnesium, zinc, vitamin D, and protein were met in all patients. Mean serum levels of **calcium**, phosphate, magnesium, zinc, 1,25-dihydroxy vitamin D (1,25OHD), parathormone (PTH), 17-beta estradiol, bone alkaline phosphatase (BAP), and under-carboxylated osteocalcin (ucOC) were normal. Serum levels of IGF-1 Z score, carboxylated osteocalcin (**cOC**), N-terminal telopeptide (NTX), and C-terminal telopeptide (CTX) were significantly lower in galactosemics than in control subjects. The different bone markers were strongly correlated. The low levels of IGF-1 Z score, formation marker **cOC**, and resorption markers NTX and CTX suggest a decreased bone metabolism in galactosemics.

L9 ANSWER 24 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2004-0354387 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2004 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Epidermal growth factor activates cytosolic [Ca.sup.2.sup.+] elevations and subsequent membrane permeabilization in mouse cumulus-oocyte complexes
AUTHOR: O'DONNELL John B. JR; HILL Julia L.; GROSS David J.
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Massachusetts, Lederle GRC, 710 N. Pleasant Street, Amherst, Massachusetts 01003, United States
SOURCE: Reproduction : (Cambridge), (2004), 127(2), 207-220, 34 refs.
ISSN: 1470-1626
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: INIST-1758, 354000116965730090
AN 2004-0354387 PASCAL
CP Copyright .COPYRGT. 2004 INIST-CNRS. All rights reserved.
AB The role of epidermal growth factor (EGF) in the maturation of mammalian oocytes is well known but not well characterized. It is known that EGF enhances oocyte maturation in vitro and that EGF stimulation of cumulus-oocyte complexes (**COCs**) induces pulsatile Ca.sup.2.sup.+efflux from the cell complex. By use of quantitative Fura-2 imaging, EGF-stimulated changes in intracellular [Ca.sup.2.sup.+] in germinal vesicle stage murine **COCs** are shown to occur in a subpopulation of cumulus cells that interact cooperatively within individual **COCs**. Oocytes fail to respond to EGF stimulus. In many of the cumulus cells responding with a rise in intracellular [Ca.sup.2.sup.+], a concomitant permeabilization of the plasma membrane is found. Neither cumulus cells of control **COCs** nor those that show a rise in intracellular [Ca.sup.2.sup.+] in response to **calcium** ionophore treatment display a similar membrane permeabilization, although those cells responding with a prolonged [Ca.sup.2.sup.+] increase in response to thimerosal or thapsigargin do display plasma membrane permeabilization. Thus, EGF stimulation of mammalian **COCs** activates release of Ca.sup.2.sup.+ from intracellular stores of cumulus cells, the depletion of which activates permeabilization of the plasma membrane. This membrane permeabilization leads to loss of cell contents and presumptive cumulus cell death. This catastrophic EGF-induced plasma membrane permeabilization of individual cumulus cells within a **COC** leads to pulsatile Ca.sup.2.sup.+ efflux as previously seen, and may lead to improved cumulus cell expansion during **COC** maturation.

L9 ANSWER 25 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2002-0595134 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Effects of β-endorphin and naloxone on in vitro maturation of bovine oocytes

AUTHOR: DELL'AQUILA M. E.; CASAVOLA V.; RESHKIN S. J.; ALBRIZIO M.; GUERRA L.; MARITATO F.; MINOIA P.
CORPORATE SOURCE: Department of Animal Production, Section of Reproduction, University of Bari, Italy; Department of General and Environmental Physiology, University of Bari, Italy
SOURCE: Molecular reproduction and development : (Print), (2002), 63(2), 210-222, refs. 1 p.1/4
ISSN: 1040-452X CODEN: MREDEE
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-18057, 354000104687190090
AN 2002-0595134 PASCAL

AB Bovine cumulus-oocyte complexes (**COCs**) and mural granulosa cells express the mRNA coding for the μ-opioid receptor. The addition of β-endorphin (β-end) to oocytes cultured in hormonally-supplemented in vitro maturation (IVM) medium had no effect on the rates of oocytes reaching the metaphase II (MII) stage, but significantly decreased the maturation rate (P < 0.05) and arrested oocytes at metaphase I (MI) after culture in hormone-free medium (P < 0.001). Naloxone (Nx) reverted this inhibitory effect of β-end. Moreover, Nx "per se" showed a dose-dependent dual effect. When added at high concentration (10.sup.-.sup.3 M), it significantly reduced the rate of oocytes in MII (P < 0.001), thus increasing the rate of oocytes arrested in Ml. However, Nx added at low concentration (10.sup.-.sup.8 M) significantly increased oocyte maturation (P < 0.001). High concentration of Nx induced an increase in both intracellular **calcium** concentration ([Ca.sup.2.sup.+].sub.i) and in the activity of the mitogen-activated protein kinase (MAPK) also called extracellular-regulated kinase (ERK) in cumulus cells of bovine **COCs**. Blocking the rise in [Ca.sup.2.sup.+].sub.i with the **calcium** chelator acetoxymethylester-derived form of bis (o-aminophenoxy) ethane-N,N,N',N'-tetraacetic acid (BAPTA-AM) reversed the Nx-dependent inhibition of meiotic maturation observed at high Nx concentrations. Whereas blocking ERK with the MAPK/ERK kinase (MEK) inhibitor, PD98059, had no effect on this process. Therefore, we concluded that the μ-opioid receptor, by inducing [Ca.sup.2.sup.+].sub.i increase, participates in the cumulus-oocyte coupled signaling associated with oocyte maturation.

L9 ANSWER 26 OF 35 PASCAL on STN
ACCESSION NUMBER: 2002-0546895 PASCAL

TITLE (IN ENGLISH): Characterization of the coupling activity for the binding of inter-α-trypsin inhibitor to hyaluronan in human and bovine follicular fluid
AUTHOR: ODUM L.; ANDERSEN C. Yding; JESSEN T. E.
CORPORATE SOURCE: Department of Clinical Biochemistry, Roskilde University Hospital, 7-13 Kogevej, 4000 Roskilde, Denmark; Laboratory of Reproductive Biology, Section 5712, University Hospital of Copenhagen, 2100 Copenhagen, Denmark; Department of Clinical Biochemistry, Holbaek, Sygehus Vestsjaelland, 4300 Holbaek, Denmark
SOURCE: Reproduction : (Cambridge), (2002), 124(2), 249-257, 34 refs.
ISSN: 1470-1626
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: INIST-1758, 354000104454440100
AN 2002-0546895 PASCAL

CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
AB The plasma proteinase inter-α-trypsin inhibitor is necessary for normal expansion of the cumulus-oocyte complex (**COC**) and lack of inter-α-trypsin inhibitor results in severe infertility. After diffusion from the circulation into the follicles, inter-α-trypsin inhibitor is incorporated into the extracellular hyaluronan network of the expanding **COC**. However, mixing isolated inter-α-trypsin inhibitor with hyaluronan in vitro does not result in coupling to hyaluronan. Other components must be present. A recently developed electrophoretic technique by which hyaluronan-bound inter-α-trypsin inhibitor is immobilized was used to demonstrate coupling activity in human and bovine follicular fluid that is necessary for the formation of a firm binding between inter-α-trypsin inhibitor heavy chains and hyaluronan, as observed in vivo. No coupling activity could be detected in human serum. Coupling occurred only in the presence of follicular fluid. The coupling activity of follicular fluid was irreversibly destroyed by heat treatment, lowering of pH or tryptic digestion, indicating that the coupling activity is associated with a protein. **Calcium** ions are essential for the coupling reaction. The binding reaction in vitro using intact inter-α-trypsin inhibitor is slow and occurs over 24 h. The early-formed complexes between inter-α-trypsin inhibitor and hyaluronan contain small amounts of bikunin, whereas the end product contains heavy chains and essentially no bikunin. The heavy chains released from inter-α-trypsin inhibitor by NaOH treatment bound immediately to hyaluronan, indicating that the dissociation of heavy chains from inter-α-trypsin inhibitor is the rate-limiting step. In conclusion, at least four components are essential for the covalent binding of heavy chains to hyaluronan: inter-α-trypsin inhibitor and **calcium** from plasma, hyaluronan and one or more proteins found in follicular fluid.

L9 ANSWER 27 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2002-0313876 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Developmental potential in bovine oocytes is related to cumulus-oocyte complex grade, **calcium** current activity, and **calcium** stores
AUTHOR: BONI Raffaele; CUOMO Annunziata; TOSTI Elisabetta
CORPORATE SOURCE: Department of Animal Science, University of Basilicata, 85100 Potenza, Italy; Cell Biology Unit, Stazione Zoologica "Anton Dohrn," Villa Comunale, Napoli, Italy
SOURCE: Biology of reproduction, (2002), 66(3), 836-842, 42 refs.
ISSN: 0006-3363 CODEN: BIREBV
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-14393, 354000100291640380

AN 2002-0313876 PASCAL
CP Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
AB A morphological classification of the immature cumulus-oocyte complex (**COC**), which grossly resembled the atresia grade of its follicle source, was used in bovine oocytes to determine 1) the developmental potential by either in vitro fertilization or parthenogenetic activation, 2) the **calcium** current activity by whole-cell voltage clamp technique, and 3) the intracytoplasmic **calcium** stores by microfluorimetric evaluation. The **COC** classification took into account some cumulus and ooplasm features, designated as follows: A) presence of a clear and compact cumulus and translucent ooplasm, B) dark and compact cumulus and dark ooplasm, and C) dark and expanded cumulus and dark ooplasm. We found no difference between in vitro fertilization and parthenogenetically activated oocytes in terms of cleavage rate and blastocyst production. Both protocols indicated a significant variability

between the three compared **COC** categories. The B-**COCs** showed the highest embryo production efficiency as well as the greatest Ca.sup.2.sup.+ current activity, whereas A-**COCs** showed an opposite pattern. The C-**COCs**, mostly attributed to atretic and heavily atretic follicles, showed morphological characteristics between those of A- and B-**COCs**. Stores of Ca.sup.2.sup.+ were significantly greater in A-**COCs** than in Band C-**COCs** in the case of immature oocytes, and greater in B-**COCs** than in C-and A-**COCs** in the case of in vitro-matured oocytes. These results demonstrate that in the bovine 1) the considered morphological criteria for oocyte classification are related to developmental competence, 2) plasma membrane Ca.sup.2.sup.+ current in the immature oocyte is related to developmental potential, and 3) **calcium** stores are related to morphological quality in immature oocytes and to developmental competence in mature oocytes.

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ACCESSION NUMBER: 1999-0413422 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): **Calcium** oxalate crystals in thyroid fine needle aspiration cytology
AUTHOR: SHIMIZU M.; HIROKAWA M.; KANAHARA T.; MANABE T.
CORPORATE SOURCE: Department of Surgical Pathology, Hokkaido University Hospital, Sapporo, Japan; Departments of Pathology, Kawasaki Medical School and Hospital, Kurashiki, Japan
SOURCE: Acta cytologica, (1999), 43(4), 575-578, 5 refs. ISSN: 0001-5547 CODEN: ACYTAN
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-10515, 354000089283100050
AN 1999-0413422 PASCAL
CP Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
AB OBJECTIVE: To determine the occurrence, distribution and location of **calcium** oxalate crystals (**COCs**) in thyroid fine needle cytology specimens STUDY DESIGN: Thyroid tissues from 60 fine needle aspiration cytology specimens (31 benign and 29 malignant lesions) were reviewed. These lesions were also histologically examined, and their pathologic diagnosis was confirmed. The cytologic slides were examined by normal and polarized light microscopy to determine their size, shape, occurrence, distribution and location RESULTS : The size and shape of **COCs** varied from case to case. The total incidence was 45% (benign diseases, 68%; malignant lesions, 21%). No significant relationship between age and occurrence of **COCs** was found. Benign diseases showed more multifocal than focal distribution of **COCs**, unlike malignant diseases. Twenty-three (85%) of 27 cases with **COCs** revealed background location of **COCs**, especially within thyroid colloid. CONCLUSION: The occurrence of **COCs** in thyroid fine needle cytology was lower than that in histologic specimens reported in the literature, and **COCs** were more often identified in benign than malignant lesions. The presence of **COCs** may be a clue to benign lesions if their distribution is taken into consideration.

L9 ANSWER 29 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1999-0386760 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Stage-dependent effects of epidermal growth factor on Ca.sup.2.sup.+efflux in mouse oocytes
AUTHOR: HILL J. L.; HAMMAR K.; SMITH P. J. S.; GROSS D. J.
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, Lederle Graduate Research Center University of Massachusetts, Amherst, Massachusetts, United States;

Biocurrents Research Center Marine Biological Laboratory, Woods Hole, Massachusetts, United States
SOURCE: Molecular reproduction and development, (1999), 53(2), 244-253, 42 refs.
ISSN: 1040-452X
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-18057, 354000084153750130
AN 1999-0386760 PASCAL

AB Epidermal growth factor (EGF) has received much attention recently for its positive effects on mammalian oocyte maturation and embryo development and its potential importance in cytoplasmic maturation of oocytes. **Calcium** (Ca.sup.2.sup.+) homeostasis in germinal vesicle stage oocytes has also been suggested to play a role in cytoplasmic maturation. This study examined the effects of EGF on Ca.sup.2.sup.+ mobilization as measured by its efflux from mouse oocytes at three time periods throughout maturation (0-4 hr, 4-8 hr, and 12 hr). Immature cumulus oocyte complexes (**COCs**) removed from the ovary for less than 4 hr exhibit oscillations in Ca.sup.2.sup.+ efflux that initiated 5-30 min following EGF stimulation. This response was not observed in **COCs** matured for 4-8 hr or 12 hr or in unstimulated 0-4 hr **COCs**. Denuded oocytes and cumulus cells did not show the same response to EGF (8.2 nM and 16.4 nM). Immunohistochemistry for detection of the EGF receptor along with EGF internalization studies showed that receptors are present both on cumulus cells and the oocyte but EGF appears to be internalized mainly by the cumulus cells. These data demonstrate that EGF induces oscillations in Ca.sup.2.sup.+ efflux in **COCs** 0-4 hr old and this response is mediated by the cumulus cells.

L9 ANSWER 30 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1998-0316021 PASCAL

TITLE (IN ENGLISH): **Calcium** elevation in sheep cumulus-oocyte complexes after luteinising hormone stimulation
AUTHOR: MATTIOLI M.; GIOIA L.; BARBONI B.
CORPORATE SOURCE: Istituto di Fisiologia Veterinaria, Facolta di Medicina Veterinaria, Universita degli Studi di Teramo, Italy
SOURCE: Molecular reproduction and development, (1998), 50(3), 361-369, 27 refs.
ISSN: 1040-452X
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-18057, 354000076495110130
AN 1998-0316021 PASCAL

AB We investigated Ca.sup.2.sup.+ levels in intact cumulus-oocyte complexes (**COCs**) on exposure to peak levels of luteinising hormone (LH). Specific preparations were used where cumulus corona cells were loaded with a membrane-permeant Ca.sup.2.sup.+-sensitive dye (FLUO-3AM), whereas the oocyte was injected directly with the nonpermeant form of the dye (FLUO-3). After exposure to LH, cumulus and corona radiata cells showed distinct rises in intracellular Ca.sup.2.sup.+ in 50-200 sec. The pattern of Ca.sup.2.sup.+ response varied in the different cells both for the duration of the transients and for their persistence. Interestingly, Ca.sup.2.sup.+ elevations were recorded in all the layers of the cumulus mass, including the innermost layer of corona cells, demonstrating the wide diffusion of LH receptors. Following the Ca.sup.2.sup.+ raise in somatic cells, an intracellular Ca.sup.2.sup.+ elevation also was recorded within the oocyte with a delay of 100-300 sec. The elevation

started at the cortex of the oocyte and then spread all over the ooplasm. The addition of verapamil or manganese chloride did not prevent LH-induced Ca.sup.2.sup.+ elevation in the **COC**, whereas mechanical uncoupling of cumulus cells from the oocyte prevented any Ca.sup.2.sup.+ response within the oocyte. The results indicate that cumulus-corona cells are capable of transducing LH message by rising intracellular Ca.sup.2.sup.+ and show that this signal is rapidly transferred into the oocyte through gap junctions. This may result from the direct diffusion of Ca.sup.2.sup.+ or its putative releaser IP3 from cumulus cells to the oocyte.

L9 ANSWER 31 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1997-0240857 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Titratable acidity of juice of sugarcane genetic stocks and its association with other characters
AUTHOR: THANGAVELU S.; CHIRANJIVI RAO K.
CORPORATE SOURCE: Sugarcane Breeding Institute, Coimbatore 641 007, India
SOURCE: Indian Sugar, (1996), 46(6), 391-396, 18 refs. ISSN: 0019-6428 CODEN: ISUGAS
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: India
LANGUAGE: English
AVAILABILITY: INIST-2642, 354000064796540030
AN 1997-0240857 PASCAL
CP Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
AB Thirty genetic stocks were planted in random block design, with 3 replications to assess the titratable acidity in juice from 6 to 13 month stalks and its relationship with other agronomic characters. Significant differences between varieties, age groups and interaction among varieties and stages age groups were observed at 0.1% level. Titratable acidity ranged from 11.1 ml O.1 N NaOH per 100 ml juice in Co 6304 and Co 617 to 16.2 ml 0.1 N NaoH per 100 ml juice in Co 853. Varieties showing low levels of titratable acidity were Co 7304, Co 617, **CoC** 671, Co 419, Co 775, Co 6806, Co 7704, Co 7508, Co 7204 and Co 997. High level titratable acidity containing varieties was in Co 853, H 50-7209, Co 1148, Co 740, Co 6304, Co 62101 and Co 678. It decreased from 17.0 ml at 6 month age to 10.2 ml of 0.1N NaoH per 100 ml of juice at 12 months. Titratable acidity had significant negative association with brix, sucrose, purity, CCS% mud volume and settling time and positive association with pH, reducing sugars, total nitrogen, colloids, potassium, **calcium**, magnesium, sulphate, ash and electrical conductivity. However, there appeared no association between titratable acidity, with cane productivity, CCS, fibre, phosphorus, sodium, silicon and colour of juice. Trtratable acidity is generally used as a measure of sugarcane juice quality. Acidity of the juice seen by titration against standard alkali, denotes total acidity and pH of the juice. It indicates the effective acidity. Titratable acidity is an indicator of quality. US mills were allowed to deduct for excess acidity, based on a scale of 2.5-4.8 ml of 0.1N NaOH needed to raise 10 ml of juice to a pH of 8.3. Irvine and Friloux (1965) pointed the frost affected cane, invariably showed higher acidity. Juice with high phosphate content had higher titratable acidity (Honig,1951). In post-freeze period rise in discemible titratable acidity increase was observed (Gurlaksh Singh and Sangat Singh 1975 & Friloux et al 1965). Kumar et al (1989) observed that reducing sugars, titratable acidity and pH also rose in smut affected cane.

L9 ANSWER 32 OF 35 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1997-0240725 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Total nitrogen content present in immature, mature and overmature cane juice of some sugarcane genetic stocks

AUTHOR: THANGAVELU S.; CHIRANJIVI RAO K.
CORPORATE SOURCE: Sugarcane Breeding Institute, Coimbatore 641 007, India
SOURCE: Indian Sugar, (1996), 46(7), 507-511, 16 refs.
ISSN: 0019-6428 CODEN: ISUGAS
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: India
LANGUAGE: English
AVAILABILITY: INIST-2642, 354000064797200030
AN 1997-0240725 PASCAL

AB Thirty test genetic stocks showed total nitrogen present in juice varied from 6 to 13 months. Co 775 recorded the lowest total nitrogen in juice 16 mg per 100 ml at 13 month age and the highest was 117 mg in Co 853 at six months age. Varieties with low total nitrogen in juice were CoA 7601, Co 775, Co 6806, Co997, **CoC** 671, Co 7204, Co 7717, Co 617 and CoJ 64 all in early maturing. Statistically significant difference between varieties and interaction between varieties and stages at 0.1% level were observed. Varietal mean ranged from 31 mg in CoA 7601 to 77 mg in Co 853. With the advancement in age of the crop the total nitrogen in juice decreased from 89 mg at 6 months to 32 mg per 100 ml juice at 13 months. Total nitrogen in juice had significant negative association with sucrose and significant positive association with amino acid, nitrogen, **calcium**, magnesium, chloride, titratable acidity and PH Juice N had influence on brix, CCS %, RS, starch, phenols, P,K,S, Na, Si, Ash, Ec in juice and fibre. Nitrogen is present in juice (Duby and Misra, 1976). Pandey and Srinivasan (1977) reported that high levels of total nitrogen in juice was likely to affect the sugar recovery (Pandey and Srinivasan, 1977). Shivalingam et al (1985) observed phosphorus and potassium reduced the juice nitrogen content.

L9 ANSWER 33 OF 35 PASCAL
on STN
ACCESSION NUMBER: 1993-0196652 PASCAL
TITLE (IN ENGLISH): Psychostimulant-induced activity is attenuated by two putative dopamine release inhibitors
AUTHOR: CALCAGNETTI D. J.; SCHECHTER M. D.
CORPORATE SOURCE: Northeastern Ohio univ. coll. medicine, dep. pharmacology, Rootstown OH 44272-9989, United States
SOURCE: Pharmacology, biochemistry and behavior, (1992), 43(4), 1023-1031, 46 refs.
ISSN: 0091-3057 CODEN: PBBHAU
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-16578, 354000032385900070
AN 1993-0196652 PASCAL
AB Centrally administered amphetamine (AMPH), cathinone, (CATH), or cocaine (**COC**) have each been shown to produce elevated activity in rats and this effect is dose responsive. The question remains whether these psychostimulants share a common mechanism of action (i.e, do these psychostimulants act by releasing dopamine to increase activity levels?)

L9 ANSWER 34 OF 35 PASCAL
on STN
ACCESSION NUMBER: 1992-0539696 PASCAL
TITLE (IN ENGLISH): Ca[Ni.sub.1.sub.-.sub.xLi.sub.x)N] : limited solid solutions (0<=x<=0.58) in the system Ca[NiN] (Y[**CoC**]-type structure)-Ca[LiN] (modified fluorite-type structure)
AUTHOR: GUDAT A.; KNIEP R.; MAIER J.
CORPORATE SOURCE: Max-Planck Inst. Festkoerperforschung, 7000 Stuttgart, Germany, Federal Republic of
SOURCE: Journal of alloys and compounds, (1992), 186(2), 339-345, 19 refs.
DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Switzerland
LANGUAGE: English
AVAILABILITY: INIST-1151, 354000020106930210
AN 1992-0539696 PASCAL
AB Solid solutions of composition Ca[(Ni.sub.1.sub.-.sub.xLi.sub.x)N] (0<=x<=.58) were prepared as polycrystalline materials by annealing mixtures of the ternary components Ca[NiN] and Ca[LiN]. Single crystals of the limiting composition Ca((Ni.sub.0.sub...sub.4.sub.2Li.sub.0.sub... sub.5.sub.8)N] were grown from the melt (tetragonal, P4.sub.2/mmc; a=372.3(1) pm, c=665.6(1) pm; Z=2; D.sub.x=3.03 g cm.sup.-.sup.3).

L9 ANSWER 35 OF 35 PASCAL
on STN
ACCESSION NUMBER: 1978-0356412 PASCAL
TITLE: The ac electrical behavior of polycrystalline ZrO.sub.2-CaO.
AUTHOR: CHU S. H.; SEITZ M. A.
CORPORATE SOURCE: Coll. eng. Marquette univ., Milwaukee, Wisc. 53233
SOURCE: J. solid State chem., (1978), 23(3-4), 297-314, 38 refs.
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: CNRS-14677
AN 1978-0356412 PASCAL
ABFR Etude en fonction de la frequence (100-500 kHz), de la concentration de **calcium** (12-19 M%), de la temperature (300-900.degre.C), de la pression partielle d'oxygene (10.sup.-.sup.5-1 atm). Effets de la grosseur de grain, du materiau de l'electrode, du degre de frittage. Analyse par les diagrammes d'impedance (1/**coC**.sub.s: T.sub.s) et la representation par circuits equivalents. Role vraisemblable de la polarisation de charge d'espace aux hautes temperatures et des joints de grains aux temperatures intermediaires. Aux basses temperatures (<450.degre.C), un canal de conduction parallele intervient, qui pourrait etre la capacite du materiau massif a effet limitatif en haute frequence.

=> (gamma carboxylated osteolcalcin) and EDTA
L28 0 FILE AGRICOLA
L29 0 FILE BIOTECHNO
L30 0 FILE CONFSCI
L31 0 FILE HEALSAFE
L32 0 FILE IMSDRUGCONF
L33 0 FILE LIFESCI
L34 0 FILE MEDICONF
L35 0 FILE PASCAL

TOTAL FOR ALL FILES
L36 0 (GAMMA CARBOXYLATED OSTEOLCALCIN) AND EDTA

=> (gamma carboxylated osteolcalcin) and calcium
L37 0 FILE AGRICOLA
L38 0 FILE BIOTECHNO
L39 0 FILE CONFSCI
L40 0 FILE HEALSAFE
L41 0 FILE IMSDRUGCONF
L42 0 FILE LIFESCI
L43 0 FILE MEDICONF
L44 0 FILE PASCAL

TOTAL FOR ALL FILES
L45 0 (GAMMA CARBOXYLATED OSTEOLCALCIN) AND CALCIUM

=> (carboxylated osteocalcin) and calcium
L46 0 FILE AGRICOLA
L47 0 FILE BIOTECHNO

L48 0 FILE CONFSCI
L49 0 FILE HEALSAFE
L50 0 FILE IMSDRUGCONF
L51 2 FILE LIFESCI
L52 0 FILE MEDICONF
L53 3 FILE PASCAL

TOTAL FOR ALL FILES
L54 5 (CARBOXYLATED OSTEOCALCIN) AND CALCIUM

=> dup rem
ENTER L# LIST OR (END):l54
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF, MEDICONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L54
L55 5 DUP REM L54 (0 DUPLICATES REMOVED)

=> d l55 ibib abs total

L55 ANSWER 1 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2004-0570519 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2004 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Bone metabolism in galactosemia
AUTHOR: PANIS B.; FORGET P. Ph.; VAN KROONENBURGH M. J. P. G.; VELMEER C.; MENHEERE P. P.; NIEMAN F. H.; RUBIO-GOZALBO M. E.
CORPORATE SOURCE: Department of Pediatrics, Metabolic Diseases, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Nuclear Medicine, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Biochemistry University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Clinical Biochemistry, University Hospital Maastricht, 6202 AZ Maastricht, Netherlands; Department of Clinical Epidemiology and Technology Assessment (KEMTA), University Hospital Maastricht, 6202 AZ Maastricht, Netherlands
SOURCE: Bone : (New York, NY), (2004), 35(4), 982-987, 44 refs.
ISSN: 8756-3282
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-19041, 354000122369650190
AN 2004-0570519 PASCAL
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AB Classical galactosemia is an autosomal recessively inherited disorder of galactose metabolism. Treatment consists of life-long dietary restriction of galactose. Despite treatment, long-term complications occur such as a decreased bone mineral density (BMD). A decreased BMD might be the result of either dietary deficiencies secondary to the galactose-restricted diet or unknown intrinsic factors. In this study, 40 children with classical galactosemia (13 males and 27 females, aged 3-17 years) on dietary treatment were included to gain insight in the bone metabolism of galactosemics. We found weight and height Z scores significantly decreased in galactosemics. Mean areal BMD Z scores of lumbar spine and of femoral neck as measured by Dual energy X-ray Absorptiometry (DXA) were -0.6 (P < 001) and -0.3 (P = 0.066), respectively. Mean volumetric BMD of the femoral neck was significant lower in galactosemics (P < 0.001). The recommended dietary allowances (RDA) for **calcium**, magnesium, zinc, vitamin D, and protein were met in all patients. Mean serum levels of **calcium**, phosphate, magnesium, zinc, 1,25-dihydroxy vitamin D (1,25OHD), parathormone (PTH), 17-beta estradiol, bone alkaline phosphatase (BAP), and under-**carboxylated osteocalcin** (ucOC) were normal. Serum

levels of IGF-1 Z score, **carboxylated osteocalcin** (cOC), N-terminal telopeptide (NTX), and C-terminal telopeptide (CTX) were significantly lower in galactosemics than in control subjects. The different bone markers were strongly correlated. The low levels of IGF-1 Z score, formation marker cOC, and resorption markers NTX and CTX suggest a decreased bone metabolism in galactosemics.

L55 ANSWER 2 OF 5 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2002:50776 LIFESCI
TITLE: Prolonged Intake of Isoflavone- and Saponin-Containing Soybean Extract (Nijiru) Supplement Enhances Circulating gamma -**Carboxylated Osteocalcin** Concentrations in Healthy Individuals
AUTHOR: Yamaguchi, M.; Ono, R.; Ma, Z.J.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan; E-mail: yamaguch@u-shizuoka-ken.ac.jp
SOURCE: Alternatives, (20010000) vol. 27, no. 1, pp. 579-582. ISSN: 1205-7398.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The effect of nijiru, which is a by-product of the processing of soybeans to make the fermented soybeans called natto, on circulating blood chemistry levels related to **calcium** and bone metabolism in healthy individuals was investigated. Twelve volunteers (six men and six women) were received nijiru twice a day for 60 days at a dose of 1500 mg (6 tablets) per day. The serum gamma -**carboxylated osteocalcin** concentration was significantly increased by the intake of nijiru in both men and women to about 2-fold that in the control group. The serum **calcium** concentration was significantly decreased by nijiru supplementation in women, and the serum inorganic phosphorus concentration was significantly reduced in both men and women. However, the intake of nijiru did not have a significant effect on serum glucose, nitrogen urea, albumin, free cholesterol, triglyceride, high-density lipoprotein cholesterol, and gamma -glutamyltranspeptidase concentrations in men or women, indicating that liver and renal function is not affected by nijiru supplementation. The results of the present study suggest that the intake of isoflavone- and saponin-containing nijiru can stimulate the gamma -carboxylation of osteocalsin, which plays an important role in bone formation and mineralization, in healthy individuals.

L55 ANSWER 3 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2000-0411608 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): Vitamin D.sub.3 and vitamin K.sub.1 supplementation of Dutch postmenopausal women with normal and low bone mineral densities : effects on serum 25-hydroxyvitamin D and **carboxylated osteocalcin**
AUTHOR: SCHAAFSMA A.; MUSKIET F. A. J.; STORM H.; HOFSTEDE G. J. H.; PAKAN I.; VAN DER VEER E.
CORPORATE SOURCE: Department of Research & Development Leeuwarden, Friesland Coberco Dairy Foods, Leeuwarden, Netherlands; Pathology and Laboratory Medicine, University Hospital, Groningen, Netherlands; Foundation Clinical Chemical Laboratory, Leeuwarden, Netherlands; Surgery, Medical Centre Leeuwarden, Leeuwarden, Netherlands
SOURCE: European journal of clinical nutrition, (2000), 54(8), 626-631, 31 refs. ISSN: 0954-3007
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United Kingdom
LANGUAGE: English
AVAILABILITY: INIST-18249, 354000090831800050
AN 2000-0411608 PASCAL

AB Objective: Improvement of vitamin D and K status of about 60-y-old postmenopausal Dutch women. Design: In a randomized study postmenopausal women with normal (T-score > -1; n=96) and low (T-score <=-1; n=45) bone mineral density (BMD) of the lumbar spine, were supplemented with 350-400 IU vitamin D.sub.3, 80 µg vitamins K.sub.1, vitamins K.sub.1 + D.sub.3, or placebo for 1 y. Serum 25-hydroxyvitamin D [25(OH)D] and percentage **carboxylated osteocalcin** (%carbOC) were measured at baseline and after 3, 6 and 12 months. Results: Baseline %carbOC of the entire study population was positively correlated with BMD of the lumbar spine and femoral neck. Correspondingly, women with low BMD had lower %carbOC at baseline than women with normal BMD hut this difference disappeared after I y of supplementation with vitamin K.sub.1 ((mean ± s.d.) 68 ± 11% (95% CI, 64.5-71.2%) vs 72 ± 6% (95% CI, 70.1-72.9%), respectively). One year of supplementation with vitamin D.sub.3 showed maximum increases in 25(OH)D of 33 ± 29% (95% CI, 24.8-41.8%) and 68 ± 58% (95% CI, 50.1 -84.6%) in women with normal and low BMD, respectively. During winter, however, a 29% decline in maximum 25(OH)D levels was not prevented in women with low BMD. Conclusion: Daily supplementation of Dutch postmenopausal women with >400 IU vitamin D.sub.3 is indicated to prevent a winter decline in 25(OH)D and to control serum parathyroid hormone levels. Daily supplementation with 80 µg vitamin K.sub.1 seems to be necessary to reach premenopausal %carbOC levels. A stimulatory effect of **calcium** and/or vitamin D on %carbOC cannot be excluded.

L55 ANSWER 4 OF 5 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 2001:58087 LIFESCI
TITLE: Prolonged intake of fermented soybean (natto) diets containing vitamin K2 (menaquinone-7) prevents bone loss in ovariectomized rats
AUTHOR: Yamaguchi, M.; Kakuda, H.; Gao, Y.H.; Tsukamoto, Y.
CORPORATE SOURCE: Laboratory of Endocrinology and Molecular Metabolism, Graduate School of Nutritional Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan
SOURCE: Journal of Bone and Mineral Metabolism [J. Bone Miner. Metab.], (20000210) vol. 18, no. 2, pp. 71-76. ISSN: 0914-8779.
DOCUMENT TYPE: Journal
FILE SEGMENT: T
LANGUAGE: English
SUMMARY LANGUAGE: English
AB The effect of the prolonged intake of dietary vitamin K2 (menaquinone-7, MK-7) on bone loss in ovariectomized (OVX) rats was investigated. OVX rats were freely given experimental diets containing the fermented soybean (natto; including 9.4 mu g MK-7 /100 g diet) without or with supplemental MK-7 (containing 14.1 or 18.8 mu g of MK-7 as total per 100 g diet) for 150 days. Feeding produced a significant elevation of MK-7 concentration in the serum of OVX rats. In this case, the femoral MK-4 content was significantly increased, but MK-7 was not detected in the femoral tissues, indicating degradation of MK-7. Serum gamma -**carboxylated osteocalcin** concentration was significantly decreased by OVX. This decrease was significantly prevented by the feeding of the natto diets with supplemental MK-7 (18.8 mu g/100 g diets). OVX caused a significant decrease in femoral dry weight, femoral **calcium** content, and mineral density. These decreases were significantly prevented by feeding with diets containing natto with MK-7 (total, 18.8 mu g/100 g diets). This study demonstrates that the prolonged intake of natto dietary including MK-7 has a preventive effect on bone loss induced by OVX. Dietary MK-7 may be useful in the prevention of osteoporosis.

L55 ANSWER 5 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1997-0539982 PASCAL

TITLE (IN ENGLISH): Management of osteoporosis : is there a role for vitamin K?
AUTHOR: WEBER P.
PIETRZIK Klaus (ed.); HORNIG Dietrich (ed.)
CORPORATE SOURCE: Roche Vitamins Inc., Human Nutrition Research, 45 Eisenhower Drive, Paramus, NJ 07652-1429, United States
Institute of Nutritional Science, Department of Pathophysiology, University of Bonn, Germany, Federal Republic of
German Association for Applied Vitamin Research, Germany, Federal Republic of (patr.)
SOURCE: International journal for vitamin and nutrition research, (1997), 67(5), 350-356, 42 refs.
Conference: Functional, Enzymatic and Molecular Biological Effects of Vitamins and Carotenoids in Prevention and Therapy. Conference, Bonn (Germany, Federal Republic of), 28 Oct 1996
ISSN: 0300-9831 CODEN: IJVNAP
DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Switzerland
LANGUAGE: English
AVAILABILITY: INIST-844, 354000069919220090
AN 1997-0539982 PASCAL

AB Vitamin K is required for the biological activity of several coagulation factors, which is considered as the classical function of vitamin K. Recent research, however, suggests a role of vitamin K in bone metabolism. The metabolic role of vitamin K is to facilitate the carboxylation of glutamyl to γ-carboxyglutamyl residues. Besides the hepatic tissue, in which the clotting factors are produced γ-carboxyglutamyl-containing proteins are also abundantly available in bone tissue. Osteocalcin accounts for up to 80% of the total γ-carboxyglutamyl content of mature bone. Human **carboxylated osteocalcin** contains 3 γ-carboxyglutamyl residues which confer a highly specific affinity to the **calcium** ion of the hydroxyapatite molecule. Besides the γ-carboxylation ofosteocalcin vitamin K may also affect other parameters of bone metabolism, such as **calcium** hemostasis, and prostaglandin E2 and interleukin 6 production. Evidence from observational studies and first intervention trials indicate that vitamin K intakes much higher than the current recommendations improved biochemical markers of bone formation as well as bone density. In conclusion, the mechanistic data as well as the observational data and the results of the first controlled clinical trials in humans point to a beneficial effect of additional intakes of vitamin K in bone health.